

REMARKS

Initially, Applicants would like to express their appreciation to the Examiner for the detailed Official Action provided, and for acknowledgement of Applicants' Information Disclosure Statements by return of the FORM PTO-1449's. However, Applicants note that the Examiner has not acknowledged that the drawings are acceptable, and it is requested that the Examiner indicate the same in the next Official Action.

Applicants also note that the Examiner has not cited the newly applied reference, DE 19548117, on the PTO form 892. Accordingly, Applicants respectfully request that the Examiner cite the same in the next Official Communication.

Upon entry of the above amendments claims 1, 22 and 23 will have been amended. Claims 1 and 10-31 are currently pending. Applicants respectfully request reconsideration of the outstanding objection and rejections, and allowance of all the claims pending in the present application.

In the Official Action, the Examiner rejected claim 23 under 35 U.S.C. § 102(b)/102(e) as being anticipated by IVANICS (U.S. Patent No. 4,745,318) or KLODE (U.S. Patent No. 6,703,740).

Although Applicants do not necessarily agree with the Examiner's rejection of the claims on these grounds, nevertheless, Applicants have amended independent claim 1 to clearly obviate the above-noted grounds of rejection in order to expedite prosecution of the present application. In this regard,

Applicants note that IVANICS and KLODE fail to teach or suggest the combination of elements as recited in amended claim 23. In particular, claim 23, as amended, sets forth a single phase induction motor including, inter alia, a magnet unit that is coupled to a supporter, and the supporter being integrally injection-molded at one side of the magnet unit.

Applicants submit that IVANICS and KLODE lack any disclosure of the aforementioned feature.

The Examiner cites to IVANICS, Figs. 1 and 3-4, as purportedly disclosing an induction motor having a ring magnet unit (6). However, IVANICS discloses the rotary element (6) being coupled to a magnetically excitable element (4) via needle bearings (8). Thus, IVANICS does not disclose a magnet unit that is coupled to a supporter, and the supporter being integrally injection-molded at one side of the magnet unit. In regards to KLODE, the Examiner cites to KLODE, Figs. 2-4, as purportedly disclosing an induction motor having a ring magnet unit (40). However, KLODE discloses a magnetic ring (40) being radially spaced from the periphery of a drive shaft (30) by end caps (38) disposed at BOTH sides of the magnetic ring (40). Further, KLODE does not disclose the end caps being integrally injection-molded. Thus, neither IVANICS nor KLODE disclose a magnet unit coupled to a supporter, and the supporter being integrally injection-molded at one side of the magnet unit. Accordingly, the rejection of claims 23 under 35 U.S.C. § 102(b)/102(e) is improper for all the above reasons and withdrawal thereof is respectfully requested.

Applicants further submit that at least one advantage of the induction motor of the present disclosure is that by providing a magnet unit coupled to a supporter, and the supporter being integrally injection-molded at one side of the magnet unit; a magnet unit having a simple structure, a high efficiency and low noise driving can be achieved at a low cost (Page 11, lines 8-12).

Absent a disclosure in a single reference of each and every element recited in a claim, a *prima facie* case of anticipation cannot be made under 35 U.S.C. § 102. Since the applied references fail to disclose each and every element recited in independent claim 23, the claim is not anticipated thereby. Accordingly, the Examiner is respectfully requested to withdraw the rejections under 35 U.S.C. § 102 and allow all pending claims in the present application.

In the Official Action, the Examiner rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over IVANICS or KLODE, in view of DE 19548117 (DE '117);

Claims 10-12 as being unpatentable over the same, and further in view of ELLIOT et al. (U.S. Patent No. 4,694,210);

Claims 10-15 as being unpatentable over IVANICS or KLODE, in view of DE '117, and further in view of SHIGA et al. (U.S. Patent No. 6,093,984);

Claims 16-21 as being unpatentable over IVANICS or KLODE, in view of DE '117, and further in view of BERNREUTHER et al. (U.S. Patent Pub. No. 2003/0168925);

Claim 22 is rejected as being unpatentable over IVANICS or KLODE, in view of KUMAKURA (U.S. Patent No. 4,227,105); and

Claims 24-31 as being unpatentable over IVANICS or KLODE, and further in view of BERNREUTHER et al. (U.S. Patent Pub. No. 2003/0168925).

Applicant respectfully traverse the above-noted rejections of claims 1, 10-22 and 24-31 under 35 U.S.C. § 103(a).

Although Applicants do not necessarily agree with the Examiner's rejection of the claims on these grounds, nevertheless, Applicants have amended independent claims 1, 22 and 23 to clearly obviate the above-noted grounds of rejection in order to expedite prosecution of the present application. In this regard, Applicants note that the applied prior art fails to teach or suggest the combination of elements as recited in amended claims 1, 22 and 23. In particular, claims 1, 22, and 23, as amended, all set forth a single phase induction motor including, inter alia, the supporter being integrally injection-molded at one side of the ring magnet unit.

Applicants submit that the applied prior art, alone or in any proper combination, lacks any disclosure of the aforementioned features.

In this regard, IVANICS and KLODE do not disclose a magnet unit coupled to a supporter, and the supporter being integrally injection-molded at one side of the magnet unit for reasons discussed above (see the above comments in regard to the 35 U.S.C. § 102(b) rejections). Further, the Examiner appears to acknowledge that neither IVANICS nor KLODE disclose the aforementioned features (see Page 6 of the Official Action).

However, the Examiner relies on SHIGA as purportedly teaching a supporter integrally injection molded at one side of the ring magnet (see Page 6

of the Official Action). However, modifying KLODE to provide the magnet with a support on one side of the magnet would destroy the object of the invention. In this regard, KLODE discloses end caps (38) positioned at BOTH ends of the magnet (see FIG. 2) to provide radial spacing from the drive shaft (30, Col. 4, lines 10-15). Therefore, it would appear that providing the support on only one side of the magnet, in the device of KLODE, would result in the magnet NOT being radially spaced at the opposite end. Similar to KLODE, IVANICS also discloses a magnet supported at BOTH ends (see FIGS. 1-4). Therefore, it would appear that providing the support on only one side of the magnet, in the device of IVANICS, would also result in the magnet NOT being radially spaced at the opposite end. Thus, the Examiner has not presented sufficient motivation for the proposed modifications, and that the only reason to combine the teachings of the applied prior art results from a review of Applicant's disclosure and the application of impermissible hindsight.

A further aspect of an embodiment of the present disclosure as recited in claim 12, sets forth a single phase induction motor, inter alia, wherein the back yoke is a non-magnetic substance.

Applicants further submit that IVANICS (or KLODE) and DE '117 in view of ELLIOT, in any proper combination, lack any disclosure of the aforementioned feature.

In this regard, the Examiner acknowledges that neither IVANICS, KLODE, DE '117, nor ELLIOT, disclose the back yoke being a nonmagnetic substance (see Page 5, lines 18-23, of the Official Action). However, the Examiner asserts

that selection of a nonmagnetic substance is a matter of obvious desing choice. However, Applicants submit that the Examiner's assertion is without any factual support. Further, at least one advantage of providing the above-noted feature is that a single phase induction motor which can increase an efficiency by reducing loss of current and reducing noise (Page 3, lines 6-8 of the present disclosure). Accordingly, the rejection is improper, and should be withdrawn.

A further aspect of an embodiment of the present disclosure as recited in claim 15, sets forth a single phase induction motor, inter alia, wherein thickness of the back yoke is .2~.6 mm.

Applicants further submit that IVANICS (or KLODE) and DE '117 in view of SHIGA, in any proper combination, lack any disclosure of the aforementioned feature.

In this regard, the Examiner acknowledges that neither IVANICS, KLODE, DE '117, nor SHIGA, the aforementioned thickness of the back yoke (see Page 5, lines 18-23, of the Official Action). However, the Examiner asserts that it would have been obvious to find the optimum workable range. Applicants submit that the Examiner's assertion is without any factual support. Further, at least one advantage of the aforementioned range is that, by providing the yoke with a thickness of between .2~.6 mm, a motor with the desired electric power consumption and rpm's can be achieved (see FIG. 9, and page 8, line 23- page 9, line 9).

Further, it is well settled law that a particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a

recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) Applicants submit that the Examiner has made no such showing. Accordingly, the rejection is improper, and should be withdrawn.

Applicants further submit that claims 24-31, recite additional features of the present disclosure. In particular, claims 24-31 recite a single phase induction motor including, inter alia, a supporter coupled to one end of the ring magnet for supporting the ring magnet; wherein the supporter is a non-magnetic substance; wherein the supporter is integrally injection-molded at one side of the ring magnet; wherein the supporter is integrally injection-molded at both sides of the ring magnet; wherein the supporter is formed of the same material as the ring magnet; wherein the bearing is a ball bearing type; wherein the bearing is an oilless bearing type; and wherein the ring magnet comprises a single magnetic element having a cylindrical shape, respectively.

However, the Examiner asserts that providing the above noted features is a matter of obvious design choice. However, the Examiner's assertion is without any factual support. Further, at least one advantage of providing the above-noted features is that a single phase induction motor which can increase an efficiency by reducing loss of current and reducing noise (Page 3, lines 6-8 of the present disclosure). Accordingly, the rejection is improper and should be withdrawn.

A further aspect of an embodiment of the present disclosure, as recited in amended claim 22, sets forth, inter alia, a magnet unit freely and rotatably installed between the stator and the rotor, the magnet unit being separated from the stator by a first air gap and from the rotor by a second air gap, wherein the magnet unit comprises a molding formed of resin and provided with a plurality of pockets therein, and a plurality of magnets respectively mounted in the corresponding plurality of pockets such that the molding covers over an entire area of each magnet in both an axial and circumferential direction of the molding, and wherein a supporter is integrally injection-molded at one side of the molding.

Applicants further submit that IVANICS or KLODE, in view of KAMAKURA, in any proper combination, lack any disclosure of the aforementioned features.

The Examiner cites to KAMAKURA, element 41, as purportedly teaching a molding completely surrounding each magnet. However, the magnets (29) as disclosed in KAMAKURA are clearly exposed from the molding along the outer circumferential and inner circumferential surfaces of the magnets (FIG. 3). Thus, KAMAKURA does not disclose a plurality of pockets in the molding, with a plurality of magnets respectively mounted in the corresponding plurality of pockets such that the molding covers over an entire area of each magnet in both axial and circumferential directions of the molding, as recited in amended claim 22.

Thus, even assuming, arguendo, that the teachings of IVANICS, KLODE, and KAMAKURA have been properly combined; the proposed combination still

would not have resulted in the features of the embodiments of the present disclosure, as recited in amended claim 22.

Further, as discussed above, the Examiner cites to IVANICS, Figs. 1 and 3-4, as purportedly disclosing an induction motor having a ring magnet unit (6). However, IVANICS discloses the rotary element (6) being coupled to a magnetically excitable element (4) via needle bearings (8). Thus, IVANICS does not disclose a magnet unit that is coupled to a supporter, and the supporter being integrally injection-molded at one side of the magnet unit. In regards to KLODE, the Examiner cites to KLODE, Figs. 2-4, as purportedly disclosing an induction motor having a ring magnet unit (40). However, KLODE discloses a magnetic ring (40) being radially spaced from the periphery of a drive shaft (30) by end caps (38) disposed at BOTH sides of the magnetic ring (40). Further, KLODE does not disclose the end caps being integrally injection-molded. Thus, neither IVANICS nor KLODE disclose a magnet unit coupled to a supporter, and the supporter being integrally injection-molded at one side of the magnet unit.

The Examiner further asserts that it would have been obvious to modify IVANICS or KLODE with the purported teachings of KAMAKURA. However, Applicants note that the Examiner has provided no explanation or motivation for correcting the above-noted deficiencies in the teachings of IVANICS or KLODE. Applicants further submit that KAMAKURA does not provide any teachings which could reasonably be characterized as curing the above-noted deficiencies in the teachings of IVANICS and KLODE. In this regard, Applicants submit that

KAMAKURA does not disclose a magnet unit coupled to a supporter, and the supporter being integrally injection-molded at one side of the magnet unit.

Applicants further submit, as discussed above, that at least one advantage of the induction motor of the present disclosure is that by providing a magnet unit coupled to a supporter, and the supporter being integrally injection-molded at one side of the magnet unit; a magnet unit having a simple structure, a high efficiency and low noise driving can be achieved at a low cost (Page 11, lines 8-12).

Applicants further submit that dependent claims 10-21 and 24-31 are at least patentable due to their respective dependencies from claims 1, 22 and 23 for the reasons noted above. In this regard, Applicants note that the Examiner has provided no explanation or motivation for correcting the above-noted deficiencies in the teachings of IVANICS or KLODE. Applicants further submit that neither DE '117, ELLIOT, SHIGA, BERNREUTHER nor KUMAKURA, provide any teachings which could reasonably be characterized curing the above-noted deficiencies in the teachings of IVANICS or KLODE.

Applicants further submit that claims 10-21 and 24-31 recite additional features of the invention, and are also separately patentable over the prior art of record. Accordingly, the rejection of claims 1, 10-22 and 24-31 under 35 U.S.C. § 103(a) is improper for all the above reasons and withdrawal thereof is respectfully requested.

In view of the amendments and arguments herein, Applicants submit that independent claims 1, 22 and 23 are in condition for allowance. With regard to dependent claims 10-21 and 24-31, Applicants assert that they are allowable on

their own merit, as well as because they depend from independent claims 1, 22 and 23, which Applicants has shown to be allowable.

Thus, it is respectfully submitted that all of the claims in the present application are clearly patentable over the references cited by the Examiner, either alone or in combination, and an indication to such effect is respectfully requested, in due course.

SUMMARY

Applicants submit that the present application is in condition for allowance, and respectfully request an indication to that effect. Applicants have argued the allowability of the claims and pointed out deficiencies of the applied reference. Accordingly, reconsideration of the outstanding Official Action and allowance of the present application and all the claims therein are respectfully requested and is now believed to be appropriate.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
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